

ENGINEERING DATA
STROMBERG-CARLSON NO. 430 RADIO RECEIVERS

STROMBERG-CARLSON TELEPHONE MANUFACTURING COMPANY
ROCHESTER, NEW YORK

IDENTIFICATION TABLE

Model	Input Power Frequency	Chassis	Cabinet	Speaker
430-H	50-60 Cycles	30317	30457	30358
430-HB	25-60 Cycles	30318	30457	30358
430-L	50-60 Cycles	30317	30104	27834
430-LB	25-60 Cycles	30318	30104	27834
430-M	50-60 Cycles	30317	30105	30359
430-MB	25-60 Cycles	30318	30105	30359
430-PL	50-60 Cycles	30867	30993	26170
430-PLB	25 Cycles only	30868	30993	26170
430-PF	50-60 Cycles	30867	30866	26171
430-PFB	25 Cycles only	30868	30866	26171

SPECIFICATIONS

Type of Circuit	Superheterodyne with Electric Tuning
Tuning Ranges	A—540 to 1700 Kc. C—5800 to 18000 Kc.
Number of Tubes	Nine
Type of Tubes.....	6A8, Modulator and Oscillator 6K7, I. F. Amplifier 6H6, Demodulator and A. V. C. 6SQ7, Audio Amplifier 6SQ7, Audio Inverter 6V6G, Output 6V6G, Output 80, Rectifier 6AF6G, Tuning Indicator
Voltage Rating	105 to 125 Volts
Power Frequency Rating.....	Standard 50-60 Cycles, also available 25-60 Cycles
Input Power Rating—	
Radio Models only.....	92 Watts
Radio-Phono Models.....	110 Watts
Intermediate Frequency	455 Kilocycles
Speaker Voice Coil Impedance at 400 Cycles.....	Approximately 1.5 Ohms
Speaker Field Coil Resistance.....	1050 Ohms

FEATURES

General

This is a nine tube, three gang, two range receiver with the 1600 Kc. to 1700 Kc. police band included in the broadcast band.

Eight button automatic tuning is provided. The tuning unit is composed of a group of coils which are adjusted by means of iron cores so that seven favorite stations may be set up. The eighth button is for switching to phonograph or television. Tone is adjusted by a variable tone control, and the dial is of the slide rule type, edge lighted to provide clear visibility without glare.

Provision is made for a record player to be used with all models not already equipped with phonograph mechanism without additional wiring. The No. 430 Phonograph Models are equipped with an automatic record changer using a crystal pick-up in conjunction with a specially equalized circuit. This record player shifts and plays either 10 or 12 inch records.

The chassis is designed to provide excellent sensitivity and tone quality, and the power output is greater than previously found in a set of this type. The selectivity and freedom from interference should be quite satisfactory.

Special Circuits

A tuning indicator having two apertures, one for strong signals and one for weak signals, is used with this chassis. One aperture will close with a signal of approximately 100,000 microvolts, and the other will not close even with a two volt signal.

Iron core coils are used in the oscillator and antenna circuits to provide greater stability and, in addition, a thermal drift compensator is included in the circuit.

The high frequency end of each band is spread out by means of special capacitor plates, to provide greater ease in tuning.

Automatic Tuning

An adjustable iron core coil type of automatic tuning is employed and the stations may be easily located by properly utilizing the concentric adjusting screws provided. A special tool known as the SD-70 Screwdriver will help materially in setting up the automatic tuning.

Phonograph Operation

A socket is provided on the back of the chassis of all receivers not already equipped with phonograph mechanism into which a record player may be plugged, and a switch is provided on the front of the chassis for switching from "Radio" to "Phonograph".

Television

Switching to "Phonograph" also makes the audio amplifier and loud speaker available for use with television receivers designed for this type of sound reproduction.

ACCESSORIES

Antenna

For best results use a Stromberg-Carlson Antenna. These Antennas are supplied in kits containing all the necessary parts for mounting and installation and are designed especially for use with all Stromberg-Carlson receivers.

Playing Records

To obtain the best quality of phonograph reproduction with receivers not already equipped with phonograph mechanism a Stromberg-Carlson record player is recommended. They are designed for use with this receiver, and all that is necessary is to connect the record player to the single prong socket provided in the chassis and proceed to operate. The volume and tone may be controlled with the controls at the receiver, or (if such is provided) the volume control on the record player may be used.

A low impedance pick-up may also be used, but a matching transformer must be placed between the phonograph pick-up and the chassis.

Headset Attachment

Headphones can be very simply attached to this receiver. Ask for P.C. No. 28303 Headset Package Assembly, which comes complete with headphones and installation instructions.

Care of Cabinet

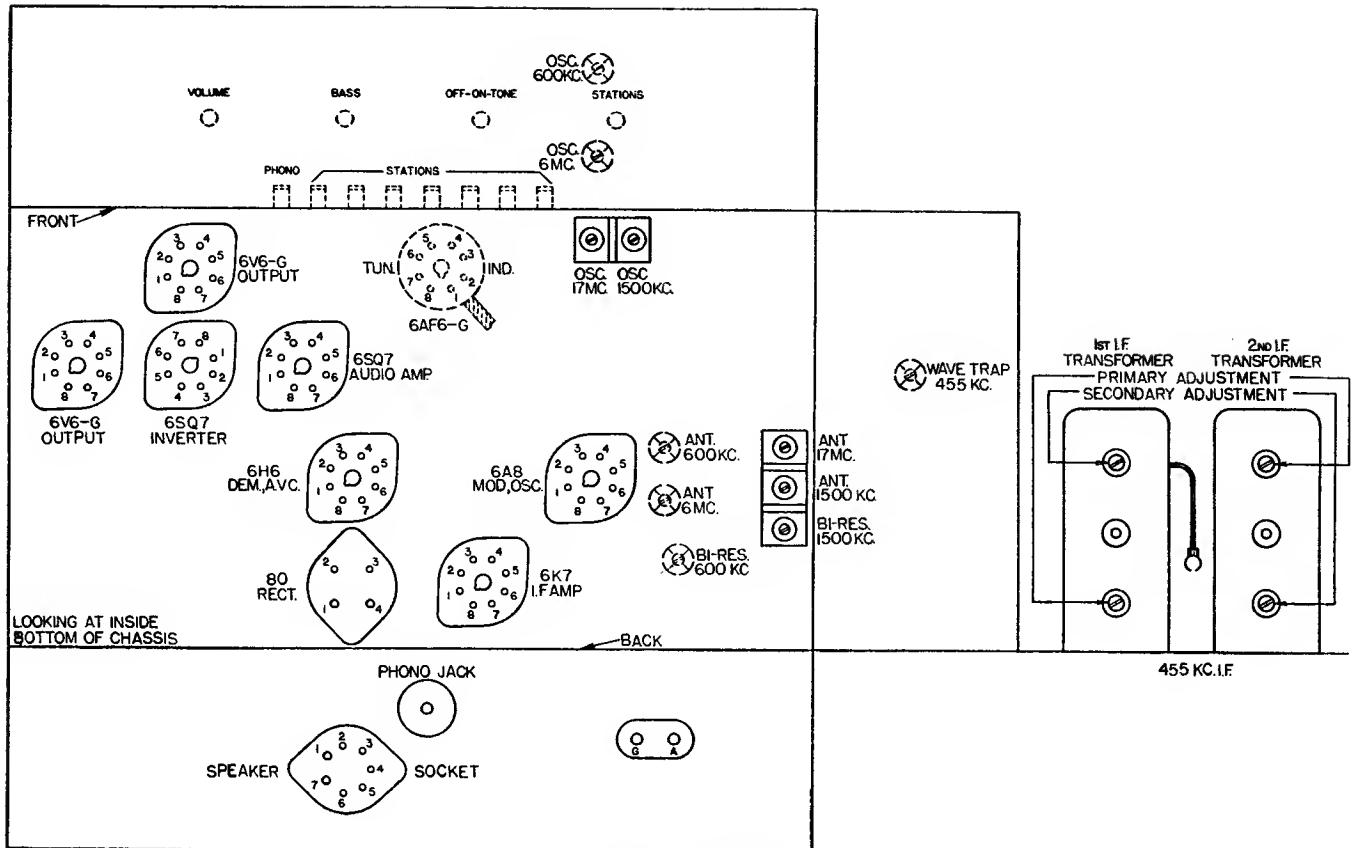
The finish of Stromberg-Carlson Cabinets should be protected by using Stromberg-Carlson Cabinet Polish regularly. It is available in pint cans, designated as P.C. No. 28601.

Nicks and scratches of most kinds can be repaired quickly and easily by proper use of the P.C. No. 26962 Touch-Up Kit. Complete instructions are provided with each kit.

Tools

Stromberg-Carlson can supply all the tools required for working on these sets. For example:

SD-29 Phillips Head Screwdriver
SD-70 Adjusting Tool (for setting up stations)
No. 24608 Aligning Tool
Also pliers, cutters, screwdrivers, etc.



Location Chart

ALIGNING INFORMATION

NEVER ALIGN UNLESS ABSOLUTELY NECESSARY.

Use a good modulated signal generator (test oscillator) with variable output voltage and a sensitive output meter across the voice coil of the speaker.

Always align using the smallest possible input from the signal generator (except when wave trap adjustment is made). A strong signal makes adjustments inaccurate.

Always have receiver volume control full on.

Never align with tone control in "Bass" position.

See location chart above for location of all the aligning adjustment screws.

Aligning Procedure (follow this order exactly)

I. Dial pointer adjustment.

With the plates of the gang tuning capacitor fully engaged, set the dial pointer directly on the vertical line located at the extreme low frequency end of the short-wave band.

II. Intermediate frequency adjustments.

1. Set the range switch to Standard Broadcast position.
2. Tune set to extreme low frequency end of the dial.
3. Connect the ground terminal of the signal generator to the ground terminal of the chassis.
4. Introduce a modulated signal of 455 Kilocycles to the grid cap of the 6A8 Tube, using a 0.1 microfarad capacitor in series with the output lead of the signal generator. (Do not remove the grid clip from this tube.)
5. Adjust the I. F. Aligners for maximum output in the following order:
 - A. Secondary of second I. F. transformer.
 - B. Primary of second I. F. transformer.
 - C. Secondary of first I. F. transformer.
 - D. Primary of first I. F. transformer.

III. Radio frequency adjustments.

Short Wave Range (C Band)

1. Replace the 0.1 microfarad capacitor in series with the output lead of the signal generator with a 400 ohm carbon type resistor, and connect it to the antenna terminal of the chassis.
2. Set the range switch to the short-wave range (C Band).
3. Set the signal generator frequency and the receiver tuning dial to 6 megacycles.
4. Adjust the 6 megacycles oscillator and antenna (iron cores) for maximum signal.
5. Set the signal generator frequency and the receiver tuning dial to 17 megacycles.
6. Adjust the 17 megacycles oscillator and antenna aligning capacitors for maximum signal.
7. Repeat operations three and four.
8. Repeat operations five and six.

Standard Broadcast Range (A Band)

1. Replace the 400 ohm carbon type resistor in series with the output lead from the signal generator with a 200 micro-microfarad capacitor.
2. Set the range switch to the Standard Broadcast Range (A Band).
3. Set the signal generator frequency and the receiver tuning dial to 600 Kc.
4. Adjust the 600 Kc. oscillator, Bi-Resonator and antenna (iron cores) for maximum signal.
5. Set the signal generator frequency and the receiver tuning dial to 1500 Kc.
6. Adjust the 1500 Kc. oscillator, Bi-Resonator and antenna aligning capacitors for maximum signal.
7. Repeat operations three and four.
8. Repeat operations five and six.

IV. Wave Trap Adjustment.

(Leave the receiver connected in the same manner as when adjusting the Standard Broadcast Range (A Band)).

1. Tune set to 1000 Kc.
2. Set the signal generator frequency to 455 Kc. and introduce a fairly strong modulated signal to the receiver.
3. Adjust the wave trap aligner for minimum signal.

ADJUSTING DIAL LAMP

The dial on this receiver is edge lighted, and for proper illumination it is **very important** that the dial light be adjusted so that the filament is exactly opposite the edge of the glass.

To make this adjustment simply slide the pilot light socket back and forth on its mounting bracket until maximum illumination is obtained.

NORMAL VOLTAGE READINGS

Take all readings with chassis operating and tuned manually to 1000 Kc.—no signal.
 Use a line voltage of 120 volts, or make allowance for the variation.
 Use a good high resistance voltmeter having a resistance of at least 1000 ohms per volt.
 Take all D. C. readings on the 500 volt scale except when an asterisk appears.

Read from indicated terminals to chassis base.

See location chart on Page 4 for position of terminals.

A. C. voltages are indicated by italics.

To measure voltages of 6AF6G tube remove the metal cover on the tuning indicator socket and read from indicated terminals.

Tube	Circuit	Cap	Terminals of Sockets								Heater Voltages Between Heater Terminals	
			1	2	3	4	5	6	7	8	Socket Terminal Numbers	Volts A. C.
6A8	Mod.—Osc.	0	0	0	+250	+110	-8*	+173	6.5	+3*	2-7	6.5
6K7	I. F. Amp.	0	0	0	+253	+108	+3.5*	—	6.5	+3.5*	2-7	6.5
6H6	Dem.—A. V. C.	—	0	0	0	0	0	0	6.5	0	2-7	6.5
6SQ7	Audio Amp.	—	0	0	0	0	0	+108	6.5	0	2-7	6.5
6SQ7	Audio Inv.	—	0	0	0	0	0	+108	6.5	0	2-7	6.5
6V6G	Output	—	0	0	+250	+254	0	—	6.5	+14.5	2-7	6.5
6V6G	Output	—	0	0	+250	+254	0	—	6.5	+14.5	2-7	6.5
6AF6G	Tuning Ind.	—	+90	—	—	+220	+110	+52	6.5	0	2-7	6.5
80	Rectifier	—	+382	375	375	+382	—	—	—	—	1-4	5
—	Speaker Socket	—	—	+382	0	0	+382	+382	—	—	—	—

*Read on lowest possible scale of voltmeter.

CONTINUITY TEST

CAUTION: Remove all tubes and disconnect the receiver from the power supply before making continuity test.

Use a good meter capable of measuring accurately up to several megohms.

The resistances given are often approximate, owing to electrolytic capacitors in the circuit.

When this is the case, be sure to reverse the test leads and read the highest resistance.

Read from indicated terminals to chassis base unless otherwise specified.

See location Chart on Page 4 for position and numbering of terminals.

TERMINALS OF SOCKETS										
Tube	Circuit	Cap	1	2	3	4	5	6	7	8
6A8	Mod.—Osc.	A	S	S	20000 Ω	B	48000 Ω	C	S	270 Ω
6K7	I. F. Amp.	3M	S	S	19000 Ω	D	390 Ω	29000 Ω	S	390 Ω
6H6	Dem.—A. V. C.	—	S	S	50000 Ω	S	50000 Ω	20000 Ω	S	S
6SQ7	Audio Amp.	—	S	10M	S	S	S	300000 Ω	S	S
6SQ7	Audio Inv.	—	S	10M	S	S	S	300000 Ω	S	S
6V6	Output (E)	—	S	S	16000 Ω	16000 Ω	270000 Ω	100000 Ω	S	200 Ω
6V6	Output	—	S	S	16000 Ω	16000 Ω	400000 Ω	O	S	200 Ω
80	Rectifier	—	19000 Ω	100 Ω	120 Ω	19000 Ω	—	—	—	—
6AF6G	Tun. Ind.	—	O	S	270000 Ω	100000 Ω	16000 Ω	O	S	6500 Ω
—	Speaker Socket	—	100000 Ω or Greater	S	S	O	100000 Ω or Greater	O	16000 Ω	—

Symbols used on chart are as follows: Ω —ohms; M—megohms; S—short; O—open.

- A. Push in any pre-set station button;
 - Set range switch to Push Button position..... 2.8 megohms
 - Set range switch to "A" range position..... 2.8 megohms
 - Set range switch to "C" range position..... 2.8 megohms
- Push buttons in normal position (all buttons out);
 - Set range switch to Push Button position..... "open"
 - Set range switch to "A" range position..... 2.8 megohms
 - Set range switch to "C" range position..... 2.8 megohms
- B. Push in "Phono" button..... 200,000 ohms
- Push in any pre-set station button..... 70,000 ohms
- C. Push in "Phono" button..... 200,000 ohms
- Push in any pre-set station button..... 50,000 ohms
- D. Push in "Phono" button..... 200,000 ohms
- Push in any pre-set station button..... 100,000 ohms
- E. 6V6 Tube Socket nearest to the front of the chassis

Other Tests Not Shown on Chart

- Antenna terminal to chassis base..... 75 ohms
- Ground terminal to chassis base..... "short"
- Phono terminal to chassis base..... "open"
- Test between terminals of A.C. plug;
 - A.C. switch open "open"
 - A.C. switch closed 5 ohms
- Terminals of A.C. plug to chassis base..... "open"
- R. F. coil tests measure directly across R. F. coil terminals with range switch in broadcast position ("A" range): L3—.8 ohm; L4—.8 ohm; L5—.1 ohm; L6—3 ohms; L7—.3 ohm; L8—4 ohms; L9—.1 ohm; L10—"short"; L11—.1 ohm; L12—"short".

INSTRUCTIONS FOR SETTING UP PUSH BUTTONS

IMPORTANT: The stations selected should be the local or favorite stations which give good reception at all times.

Set up stations in the daytime to avoid unnecessary interference.

Allow the set to run for about twenty minutes before setting up stations.

Always use the tuning indicator unit when setting up stations in order to determine when the station is exactly in tune.

1. Remove the push button escutcheon by removing the screws and pulling downward and outward.
2. Put the call letters of the selected stations in place above the push buttons. **The stations should be arranged according to frequency with the highest frequency at the right and the lowest frequency at the left, just as on the dial.** (The call letters will be found inside the envelope stapled inside or underneath the cabinet.)
3. Tune in manually the highest frequency station to be set up and note carefully the program being transmitted.
4. Turn the range switch to the push button position and push the highest frequency button.
5. Using a very small screwdriver adjust the slot in the inner screw until it coincides with the slot in the outer screw.
6. Using a larger screwdriver, adjust both screws at the same time until the desired station is tuned in as well as possible.
7. Using the small screwdriver again, adjust the small inner screw for maximum closing of the tuning indicator. (Be sure the outer screw does not move while adjusting the inner screw.)

Operations 5, 6 and 7 can be greatly simplified by using Stromberg-Carlson SD-70 Adjusting Tool which is a double screwdriver designed to fit both of these screws at the same time.

8. Set up the other stations in the same manner.
9. Recheck the adjustment of each adjusting screw.

REPLACEMENT PARTS

Use genuine Stromberg-Carlson parts. It will be to your advantage. They are made for use in Stromberg-Carlson receivers. The specifications are correct and the same high quality material and workmanship is used as in the whole radio receiver. Don't ruin a good receiver with an inferior part.

Capacitors

Piece Number	Circuit Designation	Part
24405	C-32 . . . . .	.04 mf. Capacitor
24559	C-44	100 mmf. Capacitor
24637	C-16 . . . . .	.0017 mf. Capacitor
25054	(C-49—430-PL, PF only)	150 mmf. Capacitor
25149	C-1 . . . . .	.01 mf. Capacitor
25150	C-34 . . . . .	.02 mf. Capacitor
25487	C-42 . . . . .	.001 mf. Capacitor
26151	C-41 . . . . .	.005 mf. Capacitor
27108	C-26, 27, 28, 29, 30, 31	2—.05 mf. Capacitors
27305	C-43	50 mmf. Capacitor
28594	C-33 . . . . .	.015 mf. Capacitor
30116	C-45 . . . . .	.003 mf. Capacitor
30237	C-15	385 mmf. Capacitor
30322	C-35, 36, 37, 38, 39, 40 . . . . .	.005 mf. Capacitor
30559	C-46, 47	200 mmf. Capacitor
30560	C-48	85 mmf. Capacitor
27685	C-21	Electrolytic Capacitor, 20 mf., 25 V.
30499	C-17, 18, 19	Electrolytic Capacitor (1—40 mf., 450 V.; 1—15 mf., 350 V.; 1—15 mf., 300 V.)
30253	C-6, 7, 8	Aligning Capacitor Assembly (3 unit)
30502	C-9, 10	Aligning Capacitor Assembly (2 unit)
30375	C-3, 4, 5	Tuning Capacitor (3 gang)

Coils, Transformers and Speakers

30149	L-3, 4	Bl-resonator Coil
30150	L-7, 8	Oscillator Coil "A" Band
30238	L-2	Wave Trap
30332	L-1	R. F. Choke Coil
30401	L-9, 10	Antenna Coll "C" Band
30402	L-11, 12	Oscillator Coil "C" Band
30500	L-5, 6	Antenna Coil "A" Band
27134	L-17, 18	Output Transformer
30424	L-21, 22, 23, 24	Power Transformer (50/60 Cycles)
30425	L-25, 26, 27, 28, C-25	Power Transformer (25/60 Cycles)
30432	L-25, 26, 27, 28, C-25	Push Button Coil and Switch Assembly (430-H, L only)
31078	. . . . .	Push Button Coil and Switch Assembly (430-PL, PF only)
30245	L-15, 16, C-13, 14	Second I. F. Transformer
30504	L-13, 14, C-11, 12	First I. F. Transformer
26170	. . . . .	Speaker (430-PL)
26250	. . . . .	Cone for Speaker (430-PL)
26171	. . . . .	Speaker (430-PF)
25492	. . . . .	Cone for Speaker (430-PF)
27834	. . . . .	Speaker (430-L)
27808	. . . . .	Cone for Speaker (430-L)
30359	. . . . .	Speaker (430-M)
30421	. . . . .	Cone for Speaker (430-M)
30358	. . . . .	Speaker (430-H)
22255	. . . . .	Cone for Speaker (430-H)

Controls and Knobs

27311	R-11	Off-On Switch and Tone Control
29560	R-10	Volume Control
30501	. . . . .	Range Switch
30250	. . . . .	Bass Control Switch
27802	. . . . .	Large Tuning Knob
28827	. . . . .	Small Knob with Arrow
28843	. . . . .	Small Plain Knob
29084	. . . . .	Large Knob with Arrow
29461	. . . . .	Large Plain Knob
27628	. . . . .	Felt Washer for Knobs

Resistors

26326	R-8, 9	270 Ohm Resistor, Type E
26328	R-20	390 Ohm Resistor, Type E
26333	R-5	1000 Ohm Resistor, Type E
26336	R-18	82,000 Ohm Resistor, Type E
26349	R-17	22,000 Ohm Resistor, Type E
26350	R-24	27,000 Ohm Resistor, Type E
26353	R-2, 6 (R-35-PL, PF)	47,000 Ohm Resistor, Type E
26357	R-7, 9, 34 . . . . .	.1 Megohm Resistor, Type E

REPLACEMENT PARTS—Continued

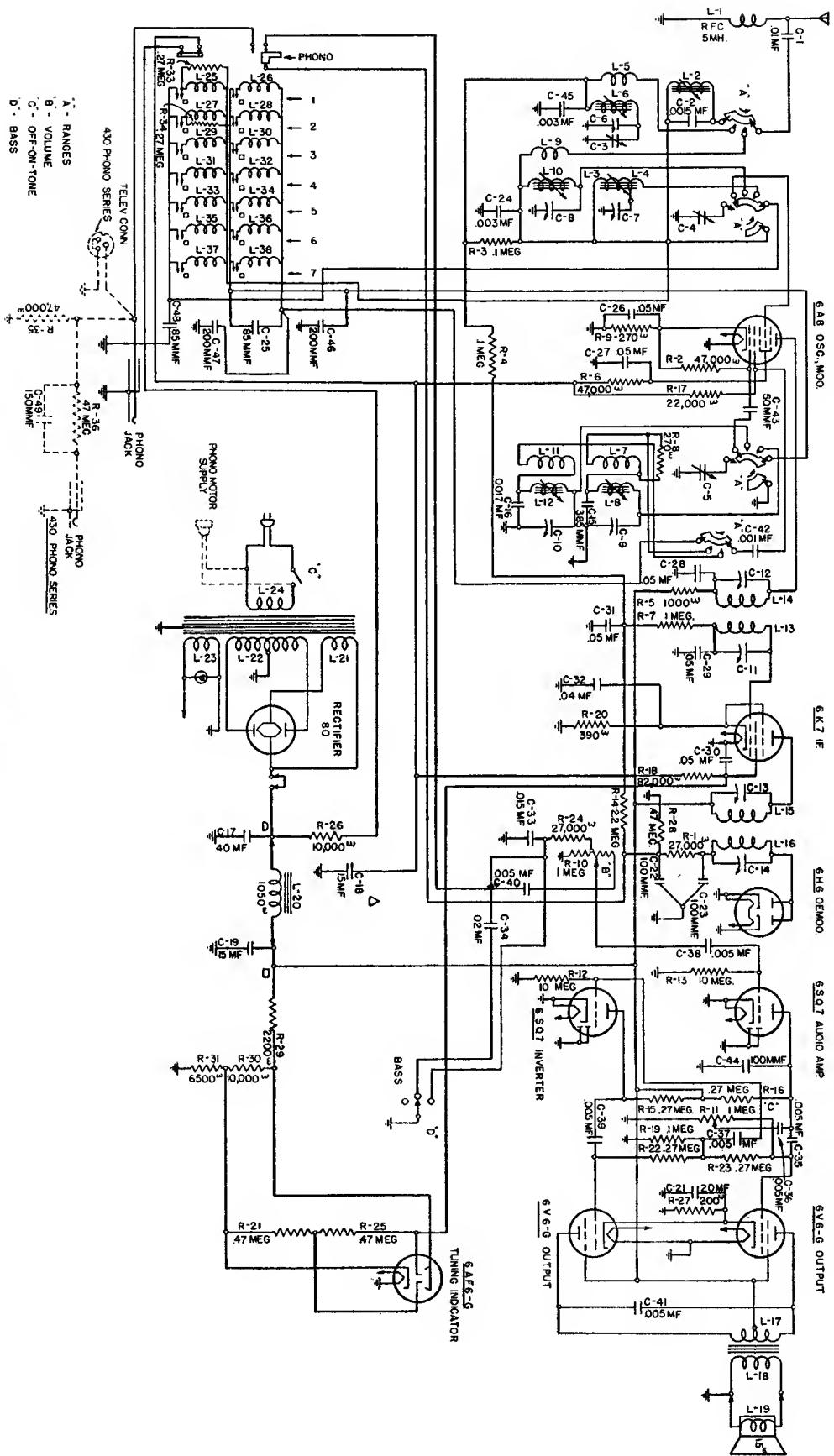
Piece Number	Circuit Designation	Part
26362	R-15, 16, 22, 23, 33, 34	.27 Megohm Resistor, Type E
26365	R-24, 25, 28 (R-36—430-PL, PF)	.47 Megohm Resistor, Type E
26373	R-14	2.2 Megohm Resistor, Type E
26381	R-12, 13	10 Megohm Resistor, Type E
28956	R-27	200 Ohm Resistor, Type I. R. C.
30400	R-23, 30, 31	"B" Voltage Divider
30417	R-26	10,000 Ohm Resistor, Type G

Miscellaneous Parts

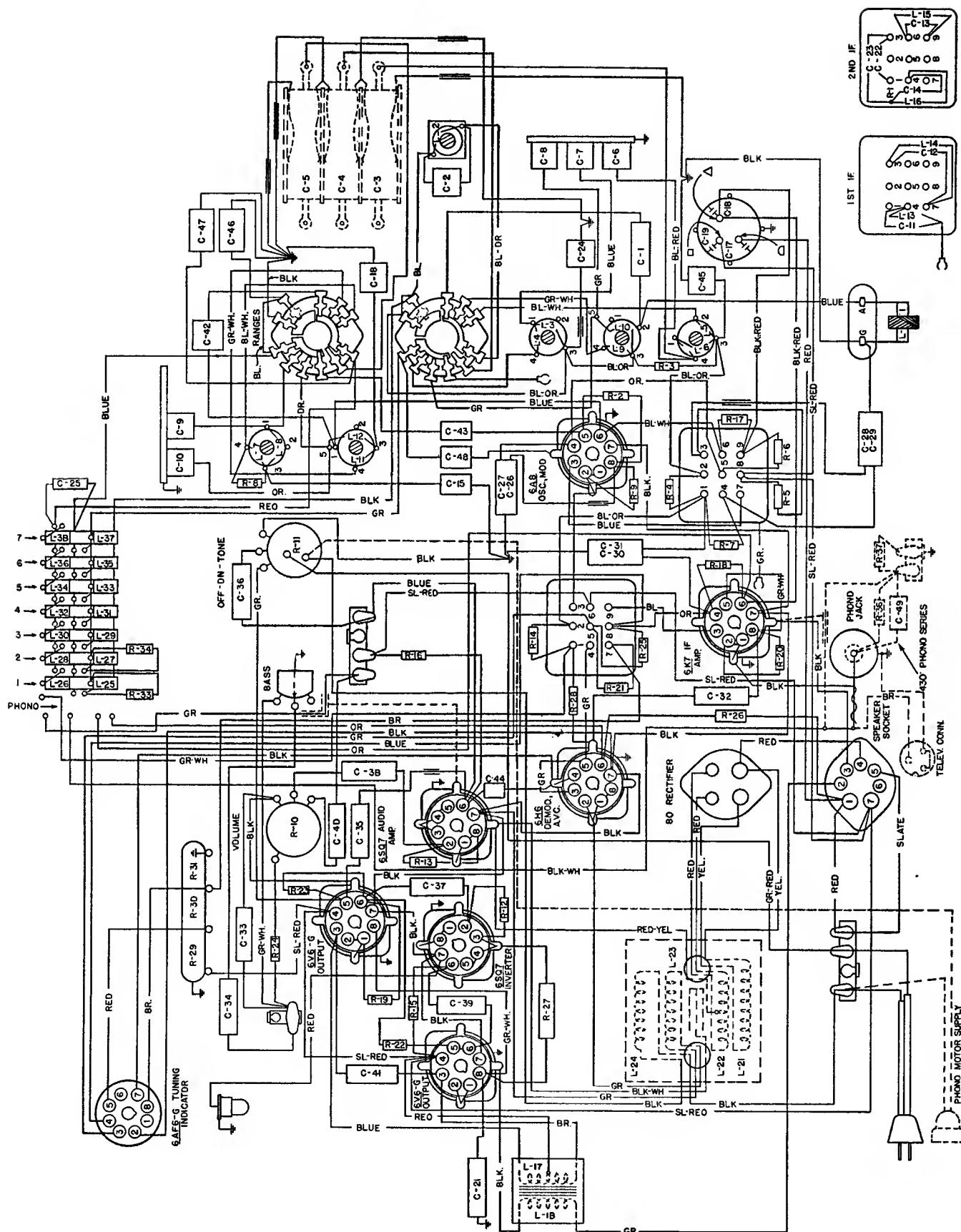
SD-67		Dial Drive Cord
26122		Antenna and Ground Terminal Strip
26677		3-Prong Plug
27088		Spring Washer for Mounting Coils
27969		Phono. Cord and Plug
28652		Power Supply Cord
28694		Pilot Lamp Socket
29956		Pilot Lamp
29628		Spring for Dial Drive Cord
30055		Dial Scale
30269		Corner Rubber for Dial Scale
30151		8-Prong Tube Socket
30152		7-Prong Tube Socket
30153		4-Prong Tube Socket
30169		Station Call Letters
30172		Dial Escutcheon
30341		Screw for Mounting Dial Escutcheon
30175		Push Button Escutcheon
30345		Screw for Mounting Push Button Escutcheon
30224		Phono. Plug
30225		Phono. Guard
30226		Phono. Jack
30265		Pulley Assembly
30275		Cord Assembly for Dial Pointer
30276		Dial Pointer
30261		Tuning Indicator Cable
30355		Rubber Bumper
30929		Connector Plug (430-PF, PL)
30930		Connector Assembly (430-PF, PL)

Tools and Accessories

SD-29		Phillips No. 1 Screwdriver
SD-70		Adjusting Tool for Setting Up Stations
24608		Aligning Tool
28601		Cabinet Polish (Pint Can)
26962		Furniture Touch-Up Kit
28303		Headphone Package Assembly



Schematic Circuit



Wiring Diagram